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ABSTRACT

This document provides a brief overview of the ongoing dropout studies cited in the press and around the Austin Independent School District (AISD) in Austin, Texas. It includes a list of key observations which notes that the dropout rate among adolescents is too high; that approximately 20% of 16- to 24-year-olds in Texas do not have a high school diploma or equivalent; and that, while the dropout rates are higher for minority students, most dropouts are white. The AISD's Office of Research and Evaluation (ORE) will be able to report a 4-year longitudinal dropout rate for high school students this year; this office has set up a longitudinal tracking system beginning at grade seven to highlight when dropping out is most likely to occur, and has supplied names of dropouts to agencies conducting statewide studies. A section on dropout-related issues describes ORE's previous activities and/or plans for obtaining information about several dropout-related questions. It looks at longitudinal and annual dropout rates, dropout interviews, and current and future plans. A commentary on dropout research funded by the Texas Department of Community Affairs discusses two dropout research studies conducted in Texas. Executive summaries from both of the studies are included in the report. (NB)

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AUSTIN INDEPENDENT SCHOOL DISTRICT
Department of Management Information
Office of Research and Evaluation

STATUS REPORT: Studies of Dropouts

This document provides a brief overview of the ongoing dropout studies often cited in the press and around AISD. The sections of this report are as follows.

I. Key Observations

II. Dropout-Related Issues

III. Commentary on Dropout Research Funded by the Texas Department of Community Affairs

IV. Texas School Dropout Survey Project

A. IDRA Study Summary

B. Texas Prairie View A & M Study Summary

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KEY OBSERVATIONS

1. Regardless of the controversy among researchers as to actual dropout rate, everyone agrees that too many teenagers are dropping out.

2. While estimates of the dropout rate range from 25% to almost 50%, the census reports about 20% of persons 16-24 years of age in Texas do not have a high school diploma or equivalent.

3. Dropouts are not a minority issue. Most dropouts are Anglo. Clearly the rates are higher for minority students, but the public should not equate dropouts and minority ethnic groups.

4. ORE will be able to report a four-year longitudinal dropout rate for high school students this year.

5. ORE has set up a longitudinal tracking system beginning at grade seven to highlight when dropping out is most likely.

6. Exit interviews of dropouts have been conducted with former AISD students. ORE has provided names of our dropouts to the agencies conducting statewide studies.

DROPOUT-RELATED ISSUES

The following describes ORE's previous activities and/or plans for obtaining information about several dropout-related questions.

Longitudinal vs Annual Dropout Rates: Longitudinal dropout rates provide information about the probability of a student's dropping out of school over a given amount of time such as a high school career. Annual dropout rates estimate the probability of dropping out for a given year. Both kinds of information are useful in assessing the dropout situation in a district.

The longitudinal rate is the rate most often considered when addressing the dropout problem. It gives the dropout rate for a specific group of students followed for a number of years. For example, one might follow all students who are first-time ninth graders in a certain year. Each year the dropout rate is likely to increase until they are all too old to attend school. The chief advantage of the longitudinal rate is that it gives an "ultimate" or summative dropout rate for the students. The chief drawback is that it takes a number of years (four to seven years for a high school rate) before this longitudinal dropout rate can be calculated for any group of students.

The annual dropout rate has its own advantages and disadvantages. The chief advantage is immediacy. An annual rate allows the District to monitor short-term changes in the dropout rate. Some measure, however imperfect, of the impact of changes in policy or the District environment on dropping out is possible. Corrective action can be more easily and more effectively directed to problems if the annual rate is available.

An annual rate has at least two drawbacks. First, it may be subject to minor fluctuations from year to year that can be over interpreted. There can be little doubt that our dropout rate has changed from year to year for the last three years.

However, as a pioneer district in the systematic reporting of dropout rates in Texas, we have no basis upon which to determine whether or not the changes we have seen in the last three years of data are normal or reflect significant districtwide changes.

The second drawback is interpretability. An annual dropout rate is not comparable to a longitudinal rate. One would think that the annual rate could be translated into an estimated longitudinal rate by some simple mathematical transformation. Our examination of the problem, however, indicates that differences in retention rates, fluctuations in the movement of students into and out of the District, and the fact that many dropouts drop back into school complicate the picture so as to render a transformation impossible.

Our strategy in meeting the District's dropout information needs has been to develop a database by accumulating dropout information across the years since our monitoring process went into place, 1983-84. This approach will eventually allow us to monitor both the annual rate and the longitudinal dropout rate.

We are currently able to monitor the annual rate satisfactorily. With each passing year we are able to extend our longitudinal rate one more year. With the system fully developed, we will be able to monitor both the short-term "blips" in the annual rate and look for the more significant long-term trends.

We believe that the system we have in place is very cost efficient. By asking school staff to make an extra copy of each transcript that is requested and mail it to us, we do not place a large burden on the school yet we collect the necessarily information at a negligible cost. To work backwards and collect dropout information for the years prior to 1983-84 is very expensive because of the way we define a dropout. Our definition is based on whether or not another school or district has requested a withdrawn student's school records. That information resides only in the student's permanent folder. It is a very expensive process to hire personnel to go to the schools to examine the records.

Actions Taken or to be Taken: The starting place of all of our dropout information is the report of our original dropout study. That study indicated that about 24% of students who were 14 years old in 1978-79 had dropped out of school by January of 1983, a period of four and a half years.

In response to that study, we were asked to establish a system for annually monitoring the dropout level by school for accountability purposes. We have set that system in place. It has been an evolutionary process as we have learned more and more about how to collect and report this type of information. By being a little ahead of others in this area, our work has had considerable impact on the ways other districts and researchers are looking at dropouts. The results of our study and our approach to drop out definition are hardly unique, but they have been disseminated around the world.

Certain aspects of our system still remain problematic, however. We are not satisfied with the reliability of our dropout counts at junior high. Our plans for the current year are to examine more closely our definition of dropout at that level. Our actions are motivated primarily by our observations of the quality of the data received from the schools this year and last and by informal information from the Intercultural Development Research Association (IDRA) concerning their study of Hispanic dropouts in Dallas which indicates that the junior high dropout rate may not be as significant as we have thought. Furthermore, we plan to institute improved procedures for longitudinal counts at the junior high level. Ultimately, we will be able to report the dropout rate for students from the seventh grade until age twenty one.

Dropout Interviews--Why Students Drop Out

Our original dropout study was done with external funds (ESAA) as one aspect of the evaluation of the impact of desegregation on AISD. The interviews we did with dropouts as part of that study taught us several lessons about doing studies of why students leave school.

First, dropouts are hard to find. Most dropouts do not seem to withdraw from school. They simply stop coming, either during the school year or during the summer. As a consequence, there is a lag between when the student leaves school and when he or she is identified as a dropout. The result is that students can be very hard to find. We were able to find only one fourth of the dropouts we sought.

Second, the fact that dropouts are hard to find means that the ones you do interview may not be representative of the entire population. They are probably more stable in their

residence than the others and may differ in other important ways. We always have to wonder how these differences have influenced the results of the study.

Third, dropout interviews are expensive. To do our study we hired graduate students from UT whom we thought could interact well with the students we found. Because we were getting graduate students desperate for money, we were able to hire good people at reasonable wages. However, the "hit rate" of only one dropout for every four we sought makes the cost of the interviews that are completed high.

Finally, we found that the results of our study were not particularly unique. Our findings were similar to those of others. The study was of more value as a reminder that our dropouts are not that different from dropouts in other cities than it was ground-breaking. In a nutshell, students are more likely to stay in school if they are having academic success, they see a value to school and a reason for going, and they have the economic and emotional wherewithal to go to school.

Current and Future Plans: A number of dropout studies are currently being conducted in Texas. The Dallas ISD has contracted with IDRA to conduct a study of Hispanic dropouts. The Texas Department of Community Affairs (TDCA) with the cooperation of TEA has contracted with IDRA and the Prairie View Division of the Texas A&M Research Foundation to conduct several studies of the Texas dropout picture. AISD has been monitoring these studies and has provided information to the TDCA studies. David Doss of ORE is a member of the TDCA advisory group for their studies.

A companion document Commentary on Dropout Research Funded by the Texas Department of Community Affairs summarizes and comments on some of the results. Executive summaries of the two TDCA-funded studies are provided.

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COMMENTARY ON DROPOUT RESEARCH FUNDED BY
THE TEXAS DEPARTMENT OF COMMUNITY AFFAIRS

IDRA Study

Section IVA is the executive summary of the report Texas School Dropout Survey Project: A Summary of Findings by the Intercultural Development Research Association (IDRA). A review of the report by ORE has produced the following conclusions. Some offer interpretations which are at odds with those of IDRA or at least have a different emphasis.

1. There is no single acceptable dropout rate for the state of Texas. The attrition rate of 33% reported by IDRA is unacceptable as a dropout rate. First, it is an estimate of how many ninth graders do not make it to the twelfth grade in four years which is not a dropout rate. Secondly, ninth-grade enrollments in Texas are inflated by a high retention at that grade. Therefore, calculations which use the ninth-grade enrollment as a base inflate the attrition rate. If eighth-grade enrollment (where there is likely to be less of a retention problem) is used to estimate first time ninth-grade enrollment, then an attrition rate of 28% is obtained. However, to reiterate, while this improved attrition rate is not without meaning, it is a poor proxy for the dropout rate which may be quite a bit higher.

Perhaps the single most meaningful estimate in the report is the 20% rate based on the census; however, it is a population rate for persons 16-24 and does not necessarily represent the dropout rate for Texas schools because it includes persons who attended school outside the state and persons who received a high school diploma (or perhaps a GED) after leaving high school. Both of these factors could impact the rate.

These criticisms of the rates reported by IDRA are not meant to diminish the importance of the problem but rather to show the difficulty of identifying valid state rates against which to compare our local results. Until the state adopts a definition that can be implemented accurately and validly statewide, our best bet is to look for trends in our local rates to see if the local situation is improving or deteriorating.

If valid and comparable numbers are to be generated by Texas districts, TEA must adopt and mandate a counting procedure that is incorporated into the required pupil accounting responsibilities

of the districts and which employs a tracking system which will allow districts to readily verify which of their students have enrolled in another Texas district. The political and practical problems associated with the development of such a system may doom the prospect of our ever obtaining such numbers.

2. IDRA reports that 15% of dropouts were born outside of the U.S.; however, they do not report what percentage of those born outside of the U.S. were dropouts. The rate could be much higher.

3. In focusing on the percentage of students who dropped out before the ninth grade, IDRA may mislead the reader into thinking that these are young students. Our studies show that the percentage of a group that drops out each year increases with age. Students dropping out before ninth grade are likely to be much older than others at the same grade.

4. In reporting their findings IDRA researchers have focused on the percentage of students in each major ethnic group who drop out. Those are undoubtedly important numbers; Blacks and Hispanics are especially hard hit by the dropout problem. However, using percentages masks the fact that Anglos constitute the largest number of dropouts. Percentages give the impression that dropping out is a "minority issue," and support for educational funding may be easier to obtain if the Legislature and the business community are aware that <u>all</u> ethnic groups are affected by the problem.

5. Another area of concern is IDRA's emphasis on "programs" as the solution to the dropout problem. Many educators believe that "programs" often fragment the instructional day of students and cloud the responsibility for their education. They are seen as a major source of the problems in education today. Improvement in campus leadership, instructional practices, the quality of people going into education, and curriculum may be of equal or greater importance in preventing dropouts. Such changes are harder to see and evaluate, but they are currently receiving much attention as ways to improve schools. When IDRA emphasizes that there are not enough programs to solve the problem, some school people cringe at the prospect of more programs being dumped on them.

6. The techniques of determining the economic impact of dropping out are controversial, and the costs cannot be easily or conclusively determined. Regardless of problems with methodology, the costs of dropping out appear to be enormous. It is

interesting to use the method of Catterall to estimate the impact of AISD dropouts on the area economy and tax revenues (in 1981 dollars). His approach estimates that last year's dropouts would have earned almost $300,000,000 more in their lifetimes if they had graduated. If one assumes that four percent of income goes to local taxes (based on census findings), they would have paid almost $12,000,000 more in local taxes over their lifetimes. To put it another way, every dropout we keep in school will earn about $155,000 more and pay about $6,000 more in local taxes.

Furthermore, these figures ignore the savings from reduced costs for welfare, public safety, prisons, etc. which would result from a higher school completion rate.

Texas Prairie View A&M Study

The Prairie View A&M study investigated factors related to dropping out. The executive summary is enclosed as Section IVB. The Prairie View project does not have the content of great interest to the public that the IDRA study does. The major finding of general interest is that attempts to identify high-risk students should be district specific.

Additional comments are as follows:

1. From talking with the investigators, it is clear that the quality of data from the other districts was very poor. Conclusions based on the data should be viewed with considerable circumspection.

2. The Prairie View investigators used AISD data for part of their study. However, we do not believe that their analytical approach was as meaningful as it could have been. Nevertheless, one finding deserves comment.

The report confirmed a finding from our previous work. When we compare students of similar achievement levels, Black students in AISD are less likely to drop out than Anglos and Hispanics (who are equally likely to leave school). However, at the state level they did not find any advantage for Black students; all three groups dropped out at the same rate when achievement and family income are controlled.

IV.A.

TEXAS SCHOOL DROPOUT SURVEY PROJECT: A SUMMARY OF FINDINGS

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October 31, 1986

EXECUTIVE SUMMARY

This report presents the results of the dropout studies conducted by Intercultural Development Research Association (IDRA) under contract with the Texas Department of Community Affairs (TDCA) in collaboration with the Texas Education Agency (TEA). The major research tasks were designed to examine three primary questions:

(1) What is the magnitude of the dropout problem in the State of Texas?

(2) What is the economic impact of the dropout problem for the State?

(3) What is the nature and effectiveness of in-school and alternative out-of-school programs for dropouts in the State?

The research was conducted during the period of May to October, 1986. Given the paucity of reliable data on dropouts, research methods included primary analyses of data collected by IDRA and secondary analyses of available databases including Fall Survey and Annual Performance Report information collected by TEA and census data collected by the U. S. Bureau of the Census. Major findings are listed below.

MAJOR FINDINGS

Magnitude of the Problem

1. The 1985-1986 attrition rate for Texas high schools was 33 percent.

2. One in five Texas young people (nearly half a million) age 16 to 24 were not enrolled in school and had not completed the twelfth grade in 1980.

3. Three out of ten Texas dropouts -- 152,000 young people--had completed fewer than nine years of schooling when they left school.

4. Approximately 85 percent of Texas dropouts were born in the United States; less than 15 percent were born in a foreign country.

5. Of the nearly half a million Texas dropouts age 16 to 24, somewhat more than half (52 percent) were male.

6. Among females, attrition rates ranged from a low of 26 percent for White females to 43 percent for Hispanic females.

7. -Attrition rates differed markedly for the three major racial/ethnic groups in the State: 27 percent for Whites, 34 percent for Blacks and 45 percent for Hispanics.

8. Hispanic youth, age 16 to 19, were twice as likely, and youth, age 20 to 24, nearly three times as likely to have left school prior to the completion of the twelfth grade as their White counterparts.

9. Nearly half of Hispanic dropouts had completed less than ninth grade when they discontinued schooling compared to 18 percent of White and Black dropouts who discontinued schooling before the ninth grade.

10. Black male dropouts were less likely to be employed than either Hispanic or White male dropouts; two in five Black male dropouts, age 16 to 19, in contrast to one in five of Whites and 26 percent of Hispanics in that age group, were not in the labor force.

Dropout Accounting Procedures

11. Thirty-nine percent of Texas school districts have a system for identifying dropouts.

12. The majority of districts follow similar but not identical forms of the TEA dropout definition.

13. Sixty-two percent of districts do not use a dropout formula for calculating their dropout rate; among districts who have a formula, 9 percent use Average Daily Attendance while 24 percent use Average Daily Membership as the base figure.

14. Only 3.5 percent of districts have conducted some form of dropout research with only nine districts conducting formal research studies on dropouts.

Statewide Tracking Survey

15. Sixteen percent of the students tracked who were presumed dropouts had not dropped out of school.

16. Twenty-eight percent of the students tracked were employed; of these, most worked at labor intensive, minimum wage jobs.

17. The majority of the students tracked left school because of poor grades, marriage/pregnancy, or financial problems.

Available Dropout Programs

18. Approximately 12 percent of Texas school districts reported having a dropout program; the number of programs reported by colleges, service delivery areas and other agencies was not commensurate with the magnitude of the problem.

19. Approximately 89 percent of dropout programs in Texas reported having no evaluation data.

Economic Impact

20. The dropout problem is costing the State $17.12 billion in (a) foregone income and lost tax revenues, and (b) increased costs in welfare, crime and incarceration, unemployment insurance and placement, and adult training and education (for each cohort of dropouts). Every dollar invested in educating potential dropouts is estimated to result in a return of nine dollars.

IMPLICATIONS OF THE RESEARCH

1. There is a need to develop and use a standardized dropout definition with explicit identification procedures.

Findings from the district dropout identification and procedures surveys, the dropout research reviews, and the student tracking surveys point to a need for a standardized, uniformly-applied dropout definition with necessary identification procedures. Only 39 percent of districts reported having a system for identifying dropouts. Among these districts, definitions were similar but not uniform. The lack of standard definitions effectively precludes aggregating individual district data across school systems and, in some cases, even prevents aggregating data across campuses within a particular school system.

Any definition and identification procedure at the State level must accommodate contextual variables at the district level and also be rigorous enough to result in reliable aggregation across districts. In addition, the definition must be sensitive to such issues as summer versus school-term withdrawals, non-attenders often carried on membership rolls, verifiable transfer procedures and completion of graduation requirements.

State efforts at standardizing dropout identification procedures were initiated in the TEA 1985 Annual Performance Report requirements. Dropout reporting requirements for 1986 focus on a districtwide base figure for grades 7-12. Student identification and tracking procedures are also being put in place with the Public Education Information Management System (PEIMS) being developed by TEA. Both of these efforts can serve as a springboard for further standardization.

2. There is a need to develop standard procedures for calculating the dropout rate.

As a corollary to the development of a standard dropout definition, calculation procedures must be standardized and clearly specified. IDRA research findings indicate that 62 percent of districts do not use a formula for calculating the dropout rate, despite current reporting requirements developed for local use.

Critical manipulable factors involved in the calculation of dropout rates include: (a) the time frame during which the number of students is counted, e.g, annual versus longitudinal, (b) the range of grade levels included in the dropout rate calculation i.e., the greater the grade span, the lower the dropout rate, and (c) the student accounting procedures used by the district, e.g. average daily attendance versus average daily membership.

While calculations of district dropout rates must remain useful at the local level, State level rates must be used to guide policy deliberations and monitor the effects of State and local intervention strategies.

3. There is a need to develop a centralized and standardized system for collection of dropout data.

The extensive variability in district dropout definitions and calculations noted above makes comparability across districts difficult at best. Even with standardization, however, it will become important to develop and maintain a centralized means of aggregating and analyzing dropout data across districts. With a centralized data base, the overall effect of intervention strategies as well as the effect of these efforts on particular populations can be monitored.

4. There is a need to develop tracking mechanisms which will increase the reliability of dropout counts and will result in more appropriate program interventions.

Research findings clearly indicate that current communication between and within districts does not facilitate tracking of students who withdraw from a particular school. Approximately 16 percent of the presumed dropouts tracked across the State by telephone or mail reported having never dropped out of school but either transferred or were still enrolled. Within districts, procedures for tracking of students are varied and depend, in part, on district size and resources. Across districts, standard recordkeeping and transfer documentation and follow-up procedures for student withdrawals would greatly facilitate tracking of students as they move from one district to another.

The Migrant Student Record and Transfer System (MSRTS) is the only national longstanding system for tracking of students. The centralization of achievement and other data at a single location currently required by the MSRTS might be circumvented through the use of a computer bulletin board concept with subsequent transfer of records remaining at the district to district level. Whatever the configuration of a feasible tracking system, it is imperative that tracking mechanisms be identified which will enhance monitoring of progress in addressing the dropout problem.

5. There is a need for early dropout intervention efforts given the large numbers of students who leave before the ninth grade.

IDRA research evidence reveals that three out of ten Texas dropouts had completed fewer than nine years of schooling. Among Hispanic dropouts, almost half had discontinued schooling before completing the ninth grade. Reviews of existing dropout prevention programs in Texas revealed that few focus on pre- high school students. If dropout prevention efforts are to effectively impact at-risk populations, prevention efforts must begin at earlier levels. In doing so, strategies must be program-focused and avoid merely labeling and stigmatizing students at earlier grades.

6. There is a need for developing and replicating model dropout prevention and recovery programs for particular types of high risk groups.

Reviews of available literature and IDRA findings related to existing State programs indicated that information on "what works" is generally fragmented. While some exemplary or model programs are in operation across the country and in the State, there is little systematic and generalizable information which would permit program replication. It is, therefore, important to develop and replicate prototypic programs which have the components which are known to be successful: teaching of basic skills, survival skills training, work/study programs, individualized instruction, strengthened guidance and counseling, highly committed and caring teachers with high expectations for their students, and community/parent/business liaisons.

7. There is a need to expand the pool of available dropout prevention and recovery programs in order to service the large and diverse dropout population in the State.

Research on existing dropout programs in Texas revealed that the number currently in operation is inadequate when contrasted with the magnitude of the dropout problem in the State. There is a dearth of formal, structured programs specifically targeted at dropout or dropout-prone youth both within and outside the State's public school systems. In addition to developing and replicating model programs, successful models and strategies must be incorporated into a substantially larger number of diverse programs which will service diverse needs within the dropout population.

In order to serve the diverse migrant

population, for example, a Graduation Enhancement Model is being developed by TEA and the Texas Migrant Interstate Program. According to data compiled by the Coordinator of the Program, migrant dropout rates are estimated to be in the 60 to 90 percent range. It is obvious, then, that more and varied programs are needed.

8. There is a need to develop systematic approaches to the evaluation of dropout prevention and recovery efforts.

The survey of dropout prevention and recovery programs indicated that 89 percent had no evaluation data . In the absence of such data, conclusions about program effectiveness are not possible. In developing guidelines and standards for evaluation, it is important to ensure that evaluation designs serve to identify programs that work for particular types of participants in particular types of situations. Strategies and results in a prevention program may differ from strategies and results in a recovery effort. Success in a prevention program for non-migrant students may differ from that for migrant students. The enormity of the dropout problem leads to the inevitable conclusion that all students do not leave school for the same or similar reasons or under the same or similar conditions. Neither the reasons nor the solutions can be the same. Evaluation designs must be able to generate information about what works, for what target group, and under what conditions.

9. There is a need to develop and link public and private sector initiatives which are proportionate to the massive number of dropouts in the State.

There are on-going substantive efforts directed at the dropout issue in the State of Texas. State agencies, including TEA and TDCA, have already begun initiatives designed to address the problem from both a prevention and recovery perspective. Private corporations, including Coca-Cola USA and Southwestern Bell, are sponsoring efforts designed to raise awareness of the issues and to develop program alternatives. Foundation support is also being directed at the dropout problem. The Ford Foundation, for example, has established a national dropout initiative which involves public and private sector collaboratives. Further development of communications networks and other linkages between private and public sector initiatives is central to effective dropout interventions. Coordination is also crucial to maximizing the return on the investment which must be made.

The linkages and networking which are necessary to producing results in the area of school dropouts will be facilitated by working within the concept of the educational pipeline. A focus on the student, as he or she progresses through the pipeline, i.e., kindergarten through public schooling and on to a college education, provides context and continuity. The Dallas County Community College District, for example, has established Adopt-A-School partnerships with area middle schools. College faculty are given release time in order to provide staff development and technical assistance to schools.

10. There is a need to make an investment in dropout prevention and recovery efforts which is commensurate with the magnitude of the problem and its economic impact in the State of Texas.

The number of dropouts for the graduating class of 1985-1986 was estimated to be 86,000. This represents a 33 percent attrition rate for a single group of high school students over a three year period. Over the course of their lifetime, projected losses in tax revenue averaged $58,930 per dropout. The estimated cost of keeping each of these students in school was $3,859 per averted dropout. In addition, the State would have realized a savings of $652 million in social expenditures related to crime, welfare, incarceration and unemployment costs. Every dollar invested in educating potential dropouts will result in a return of nine dollars. An investment in human capital yields substantial short and long term results.

IV.B.

TEXAS SCHOOL DROPOUT SURVEY PROJECT

Prepared for

DEPARTMENT OF COMMUNITY AFFAIRS

STATE OF TEXAS

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EXECUTIVE SUMMARY

I. DATA SOURCES

This study used data collected through two sources to investigate factors associated with school dropouts in Texas. The first data set consisted of information from the High School and Beyond Base Year, First Follow-Up and Second Follow-Up data files. High School and Beyond (HSB) is part of the National Center for Education Statistics National Longitudinal Studies program on the educational and occupational experiences of high school-aged youth. In the spring of 1980, HSB surveyed a national sample of high school sophomores and seniors. The First Follow-Up study was conducted two years later, in the spring of 1982, and the Second Follow-Up study was conducted two years later, in the spring of 1984. A number of states had such a large student population that the sampling produced data that was a reflection of the actual population of high school sophomores in the state. Texas was such a state. The study reported here used only the sophomore cohort from the 1980 Texas sample.

The second data set consisted of primary information collected from the files of five independent school districts in Texas. Although there was much variation in the content of student files, the following information was secured: ethnicity; sex; date of birth; last grade completed; Texas Assessment of Basic Skills scores for reading, writing, and mathematics; and, finally, the standardized test scores on either the California or Iowa Test of Basic Skills. Since the dropout problem is commonly thought to originate long before high

school, this second data set was collected on junior high (7th and 8th grade) as well as on high school students.

The study findings shed considerable light on the principal factors associated with school dropouts in Texas. Moreover, predictive factors for identifying potential dropouts along with antecedent factors characteristic of dropouts were determined.

II. LITERATURE REVIEW

The literature survey identified a number of theories that try to explain why students drop out of school. Two specific models were used to classify the various approaches to explaining dropout behavior. These were: (1) the educational attainment model focusing on the acquisition of schooling by young people and (2) the "human capital" model, emphasizing the opportunity cost of schooling versus the expected wage premium from completing school.

The educational attainment literature emphasizes such things as the role of ambition or educational expectations in overcoming the limitations of socioeconomic background and academic ability, and how these affect the level of schooling eventually attained by an individual. The educational attainment approach examines the social and psychological processes that influence the career decisions of young people. Critical to these processes are individuals important in the student's life who shape educational expectations, other attitudes, and personalities. Such individuals might include parents, teachers, and peers. Proponents believe social and psychological factors contribute importantly to a student's concept of self. Although the educational attainment

perspective does not directly focus on the problem of dropping out of school, it is useful in understanding the behavior of dropping out.

The second perspective is that of the human capital literature. This approach emphasizes the investment aspect of the schooling decision and considers schooling to be valuable because the skills imparted make the schooled individual more productive than the unschooled. The human capital approach directs attention to the economic life cycle, in which a rational individual continues to buy more schooling until the marginal cost of the additional investment equals the marginal return, and then the individual enters the labor market to obtain the return for which the investment was made. According to the human capital approach, the decision to leave school then depends on the balance between the expected wage premium attributable to the completion of high school and the expected opportunity cost of staying in school.

Evidence from the review of the literature suggests that no consensus presently exists as to what theory or perspective best explains school dropout behavior. However, a consensus does appear to exist concerning some of the factors that are associated with dropping out. Generally speaking, academic performance, psychological factors such as measures of cognitive ability and self-esteem, socioeconomic background, and early transition into adult roles (examples of which include marrying or getting pregnant while still in school) all seem to be important predictors of school dropout behavior.

III. SIGNIFICANT PREDICTORS

A. High School and Beyond Survey

Indicators of the significant predictors identified from the review of the literature were applied to the Texas sample from the High School and Beyond Sophomore Cohort. An effort was made to see how well those factors explain high school dropout behavior in Texas. Moreover, an attempt was made to explain the noted race/ethnic and sex differences in dropout rates. The first finding of some significance was that in the presence of controls for socioeconomic status and measures of ability, race/ethnic and sex differences in dropout rates vanish. This finding is consistent with that of other researchers using other data bases. The factors that appear to have a major effect on explaining dropout rates are high school grade point average, marriage while in high school, number of unexcused absences, age and the speaking of a non-English language in the home.

Although no significant differences in dropout rates were found by race/ethnicity and sex with indicators of socioeconomic status controlled, from a policy prevention perspective it is still important to know whether the dynamics explaining the dropout decision are similar. Consequently, separate equations were estimated for each group. The significant factors are presented in Table 1.

For Anglo males three factors were significant: high school grade point average, the number of unexcused absences from school, and socioeconomic status. A one point increase in the grade point average decreases the probability of dropping out by .13. Ten unexcused absences increases the

TABLE 1

Significant Predictors of High School Dropout Behavior

Independent Variables	Anglos		Hispanic		Black
	Male	Female	Male	Female	Total Sample[3]
High School Grade Point Average	-.130[1]	--	-.225	-.219	-.457
	(2.61)[2]	--	(8.51)	(6.61)	(4.65)
Age First Worked For Pay	--	--	.038	--	--
	--	--	(3.22)	--	--
Married	--	--	--	.494	--
	--	--	--	(9.19)	--
Children	--	--	.296	--	--
	--	--	(3.61)	--	--
Socioeconomic Status	-.101	--	--	--	--
	(3.52)	--	--	--	--
Non-English Used in the Home	--	--	.215	--	--
	--	--	(6.94)	--	--
Attended a Rural School	--	--	.179	--	--
	--	--	(3.37)	--	--
Age	--	--	.120	.117	.211
	--	--	(6.81)	(3.44)	(4.47)
Number of Unexcused Absences	.067	--	--	.060	--
	(7.02)	--	--	(5.63)	--
Indicator of Self-esteem	--	.189	--	--	--
	--	(5.25)	--	--	--

Source: High School and Beyond Survey Data.

[1]The Coefficients were estimated with a logistic recognition model. The estimated coefficient can be interpreted at the charge in the probability of dropping out due to a unit change in the particular independent variable.

[2]The chi-square statistics are in parentheses.

[3]The black equation was estimated on the combined sample of both males and females because of sample size consideration.

probability of dropping out by .67, and as the socioeconomic status of the parents increases, the probability of dropping out decreases. The findings for Anglo females differed. The only statistically significant predictor was the indicator of low self-esteem. For females low self-esteem significantly increases the probability that a student will dropout of school.

The results for Hispanics differ in some respects from the findings for Anglos. First, the list of factors that appear to be important predictors were more numerous. These were high school grade point average for both males and females; number of unexcused absences for females; age for both sexes; family size for females; an indicator of early work experience for males; urban or rural location of the high school for males; marriage while in high school for females; an indicator of whether the student has children for males, and a language other than English spoken in the home for males. For Hispanic males the largest effect is from having children while in high school. For Hispanic males, having children increases the probability by .295 that they will drop out compared with someone without children. By far the largest effect for Hispanic females is from marrying while in high school. For this group, marrying while in high school increases the probability by .444 that a student will dropout when compared with a non-married Hispanic female.

The final group considered was blacks. Because of the small sample size, it was necessary to estimate the dropout equation on a combined sample of both males and females. The results nevertheless are instructive. For blacks, a one point increase in the grade point average decreases the probability of dropping out by .614. However, both having children while in high school and being older increase the likelihood that a black will drop out compared with blacks without children and blacks that are younger.

B. Local School District Survey

Significant predictors were also estimated from information available from five local school districts. The findings give further insight into the complexities surrounding the school dropout problem in Texas. For instance, there were regional differences in dropout behavior. With a limited data base, however, it could not be discerned whether the differences were (1) due to differences in the racial/ethnic composition of some of these districts, (2) result of differences in resources allocated to working with potential dropouts, or (3) the fact that the average socioeconomic level differs across the sampled districts. Generally, the older a student is relative to the mean age of students in a particular grade, the more likely the student is to dropout. This finding, however, was not true in one district. Also found was that the importance of test scores, although useful as predictors of dropout behavior, varied across districts. There were, of course, some similarities across school districts. The number of absences in a year were positively related to the probability of dropping out. And the timing of students' dropping out in all five districts suggests that to have a successful dropout prevention program, it is necessary to target the risk students as early as possible.

IV. IMPLICATIONS AND RESEARCH BASED RECOMMENDATIONS

A major finding of this study is that we can with some degree of accuracy identify students that are at risk of dropping out of school. Moreover, the information needed to accomplish this task is available to local school districts. The development of a dropout prediction model as a first

step in any dropout prevention strategy involves a number of steps. The primary task is to draw a sample of dropouts and completers from the school district files. This in itself is no easy job for several reasons. First, individual student files which are created by primary and middle schools rarely are passed along in their entirety to secondary schools. Second, even through computerized record and information storage and retrieval has been administratively feasible for nearly twenty years, only a handful of districts maintain ADP storage and retrieval systems. Third, not only are current records difficult to access, files for students dropouts are routinely dumped after a few years because of a lack of filing space. These problems hinder any effort to examine historical differences in the dropout population of today and years past. A final impediment to gaining access to student records was the reluctance of school districts to permit access by outside researchers. Most resistance stemmed from legal considerations as to confidentiality of student files. Other districts were uneasy about the evaluative implications of an extensive review of student records. Obviously, some of these concerns are not relevant if the predictive model is initiated at the behest of the local school district. Regardless, locating the data and retrieving it in a format that is usable will continue to pose some problems.

The information identified as readily accessible was age, sex, standardized test scores, and absenteeism. Other information such as whether the student receives free lunch (a possible indicator of poverty), whether the student has received any special education instruction, and whether, for example, they speak a language other than English at home might be useful predictors for a dropout model. Once this information is collected, it has to be coded and carefully punched into a computer for analysis. The end product at this stage

of the modeling process is a prediction algorithm for identifying students at risk of dropping out of school. Because conditions and circumstances vary across districts, the prediction model should be district specific. Furthermore, the review of the literature and our own examination of local districts suggests that timing of any intervention strategy is important. In fact, when to estimate dropout probabilities for students in the school district is critical to the success of any dropout prevention program. By the 11th grade, most students that are a high risk for dropping out will have already done so. In fact the mode for each district was somewhere around the 8th or 9th grade. For districts to increase the rate at which potential dropouts are "saved," the prediction probabilities should be computed as early as possible.

The next phase of this dropout prevention model entails the delivery of services to potential dropouts in an effort to keep them in school. A major point that comes out of the literature review and the analysis of data in this study is that the approach to the dropout problem must be multi-faceted.

Dropping out is usually not due to just one problem but a collection of different problems. For example, grades operate to influence a student to dropout or stay in school; however, it is also apparent that factors such as marriage while in high school increase the odds that a student will dropout. As a result, groups or organizations concerned with individual issues should be linked in a common effort to address all aspects of the dropout problem. Another important point to surface was that the dynamics behind dropping out were sufficiently different by sex and race/ethnicity that these factors need to be considered in designing any plan of action. For example with Anglo males unexcused absences from school are highly correlated with dropping out, while for Anglo females low self-esteem is an important correlate. For Hispanic males language appears to be a problem. Finally, for blacks, we found that having children while in high school significantly increases the likelihood of dropping out.

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